



ELECTRONIC TUBE REFERENCE

X109

Voltage - Triode (with diode, heptode or hexode) electronic tube

CONSOLIDATED TECHNICAL
DATA

2 SECTIONS
CONSTRUCTION
HEXODE-TRIODE

Triode-hexode frequency changer for receiver operation to approximately 100 MHz. The triode provides local oscillation while the hexode performs conversion, making it suitable for VHF-capable superheterodyne front ends.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	9
NOMINAL HEATER	19 V / 100 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

SECTION RATINGS

SECTION1 Triode	
TRANSCONDUCTANCE	0.0028 S
AMPLIFICATION FACTOR	22
MAXIMUM PLATE VOLTAGE	100 V
<i>Marconi X109 miniature triode-hexode frequency changer to about 100 MHz, using 19 V, approximately 100 mA indirect heater. Oscillator triode maximum anode voltage 100 V, typical gm 2.8 mA/V and amplification factor 22 at 100 V anode and zero grid bias. Distinguish oscillator anode voltage from frequency-converter hexode anode voltage.</i>	

SECTION2 Hexode

MAXIMUM PLATE VOLTAGE	250 V
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MAXIMUM SCREEN VOLTAGE	100 V
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Marconi X109 triode-hexode frequency changer: converter hexode anode rating 250 V and screen rating 100 V. Intended service to around 100 MHz; operating examples use lower supply values. The oscillator triode has a distinct maximum anode voltage of 100 V. Manufacturer heater 19 V, approximately 100 mA. Keep conversion slope separate from ordinary intrinsic gm.

Triode-hexode frequency changer for operation to 100 MHz.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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Published test conditions and operating points. Values on this page are preserved as reported by this source.

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Section 1 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Oscillator section function	Local oscillator	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Oscillator anode voltage	100 V	—

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Section 2 · Hexode

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Mixer section identity	Hexode	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Mixer anode voltage	250 V	—
Mixer screen voltage	100 V	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Frequency-changer service	Explicit	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum operating frequency	100 MHz	—

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and their source documents.

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